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Learning Online:
Voices from the Ether
and Intellectual Amplification

Linda M. Harasim, Ph.D.

Judith Weinstein

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1. Introduction: User Profiles

This report presents user feedback on various aspects on learning online. The data presented here are from a graduate course offered enterely online at O-I-S-E, in the fall of 1988 (Note: a report on similar issues was written earlier analyzing user reports from the same course offered the previous year -1987: Harasim, 1988).

Of twenty participants enrolled in course 1551, fall 1988, one dropped out early on due to technical difficulties. Seventeen of the remaining nineteen participants responded to the first three weeks of the "Question of the Week" survey, and fifteen responded to week four. Technical difficulties delayed responses for one individual, but with support, or secondary inquiries, those responses were obtained. One advantage of the online medium is the ease of sending reminders to non-respondents. This is fortunate, as some participants found themselves overwhelmed with the volume of reading which which delayed their response to the survey.

Participants in this course are all currently registered students in the department of Measurement, Evaluation and Computer Applications at the Ontario Institute for Studies in Education. Five of the participants are full-time students, thirteen are part-time students, and one is a special student. All full-time students have typing experience. Five participants described their comfort level with typing as very good, six as quite, and the remaining five as somewhat good. Everyone reported having a positive view of computers. Three of the group had moderate trust in the computer to hold data, with the rest having a high degree of trust in this regard. Six member of the group had previous conferencing experience, twelve had none. Seven of the students had little or no previous experience with communication technology (ie modems) and software.

Four sets of questionnaires were sent out to every participant in the course. Each set centered around a particular theme. Week 1 asks about the areas of uploading and downloading, Week 2 about pragmatic and problematic aspects of the students use of the medium for course work. Week 3 centers around the organization of on line course work. Week 4 explores reactions to various components of the course process.

Starting at the sixth week of the course, the questions were sent to each course participant as a personal note. The response for Week 1 was 17 of 19, or 89.5%. For Week 2 it was also 89.5%. For Week 3, 16 responses, or 84% was received; the 17th response was forwarded by the participant, but never received. For Week 4, 17 replies were received; however, since one of these stated that they could not reply to the questionnaire as it was presented, the real response rate was 84%.

2. Week 1 Questionnaire: Uploading and Downloading

This questionnaire focuses on the integration of uploading/downloading into the patterns of work for participants, including technical difficulties in uploading/downloading, and the impact of such difficulties on course work.

There is a wide variety of descriptions of activities called up/downloading within the responses. Some indication of the variety of activities which might cause participants to respond that yes, they do upload/download is given in the illustrative comments in question # 4. This indicates that materials for new users need further expansion.

To summarize the responses to the questions:

2.1. Are you up/downloading for this course?
Seventeen learners responded to this question: sixteen report that they upload for this course; of these, fifteen download (one of these people downloads a lot). One does not download at all.

One person uploads specific data: course material, assignments and "silliness" in coffeehouse. This person downloads almost everything in batches, peruses at his/her leisure through WORD PROCESSING and decides what to keep, what to print and what printed material to keep in a binder. Another person peruses on line. and prints when necessary.

In summary: 15 up/download; 1 uploads only; 1 neither uploads or downloads.

2.2. Did you learn to up/download for this course:
Ten learned to up/download for this course One person already knew how to download but learned to upload specifically for this course No one reported learning to upload/download for a previous online course. Besides the individual who previously knew how to download only, The remaining five learned to up/download to access Bulletin Boards, to communicate with other computers on-line in previous use of Bulletin Board Systems, or for some other reason. Some had taken MECA and CSG courses Courses in which they were required to download from the VAX.

In summary: 10 learned to up/download for this course (one to upload); 2 learned for previous courses; 2 were experienced users; 1 for another reason.

2.3. Have you had technical difficulties up/downloading?

2.3.1. Please describe the problems
Of the sixteen who answered, twelve reported having technical difficulty up/downloading.

The major difficulties lay in the following categories:

1. **ASCII Transmission (3)** One person reported problems with transmission of a Wordstar ASCII file. Problems with transmission of files with dashes, etc. were also reported (word not specified, Kermit used for transmission). Problems converting to ASCII with Appleworks was reported by one person.

2. **Effective use of the PARTI System (3)**One felt that understanding how to "batch" in PARTI would increase their efficiency in downloading, etc. Another felt some confusion about controlling PARTI "At first it wasn't clear to me whether to be in scratchpad or not and I had a few failures Another reported that they "did not understand the range of commands available, and what they could do. once I was able to understand more about the Parti system, no problem."

3. **Effective use of Communications Software (2)** Two respondents reported problems with use of Kermit. Another reported problems with PROCOM. During attempts to deal with these problems conflicting, and very

complicated, advice was received. Eventually the system was mastered. and discovered to be simple. (Is one potential problem with peer vs expert advice apt to be excessively complex routines/solutions?) One reported difficulties with downloading with QMODEM, but success with uploading. One couldn't download a specific file.

4. **Telecommunications** (1) One respondent had difficulty with Datapac in finding which nearby node would function.

Minimal Difficulty

Three of these respondents only had minimal difficulty and these were: the method was cumbersome and slow but "doable"; there was "some" difficulty due to lack of experience; any technical difficulty was minimal, but experimentation was necessary to find the best method.

One respondent commented that "The problems with downloading were/are frustrating but that's all. The problems with uploading reduced my interaction initially beyond off the cuff kinds of comments. I was reluctant to pursue anything in depth without being able to edit as I am not a great typist."

"No Problem"

Four of the respondents had no technical difficulties up/downloading One of these reported that they had, on the instructor's advice, "...learned to use my hardware/software before the course began. Excellent advice."

ASCII files from Wordperfect transmitted with no difficulties.

In summary: 12 had technical difficulty (3 felt only minimally); 4 had no difficulty

In addition, comments included "wish list" items (ie they know someone can do these and they'd like to be able to) These are: the use of disk capture; uploading directly from local micro to Parti without going through the VAX; being able to download conference material without all the Parti commands.

2.4. In what ways did the technical problems affect your class interaction and activity?

Five people reported no problems. One person stated that they experienced frustration. One started late, and one found that the technical problems increased their time online. One person felt their problems reduced their off-the-cuff responses, and four people felt that they reduced indepth interaction. Five people did not respond.

One of the respondents whose difficulties delayed participation made a comment underlining the importance of clearing up technical problems prior to entering into the course process "...by the time I was capable of working with my modem and with up/downloading, I felt that the cmc community was firmly established and that I was an outsider. I feel that it took the next few weeks to overcome that feeling. Now I feel like a strong, possibly even dominant contributor."

2.5. Has the ability to up/download facilitated (or not) your work in this course?
Fifteen people responded yes and two no to this question.

Two types of statements were made: four commented that even with the advantages offered by up/downloading they were inhibited by awareness of cost factors; four others commented on reduction of interaction concerned continuing problems with dealing with technical aspects.

Related technical comments included two people who wordprocessed and uploaded, but did not download. Two people mentioned uploading to the VAX and pulling across to Parti. There were also two comments on using printing (print screen or print while batch reading) as their method of downloading.

In contrast, four other comments related savings in time and money to facilitating their work in the course. A related comment was that "The bottom line is, being able to up/download gives me the maximum flexibility to work on this course whenever, and wherever I happen to be."

Most comments centered around the ability to think at one's own pace. Eight people discussed the advantage of downloading, reading "with time to...digest...and research" off line in resulting in greater opportunities for "fully contemplated thought.

One reported that up/downloading made life easier, and the development of "two different attitudes regarding CMC. When I'm feeling frivolous, like I do not have to provide serious considered responses, I tend to talk directly through my fingers. However, when I want to think things through and take time to research comments for main-line activities, I wp first and then upload."

In summary:

15 felt knowing how to up/download greatly assisted them in the course work, with eight mentioning the opportunity for off line thought. Two did not feel that up/downloading assisted them in the course, indicating that they had in fact not mastered the techniques. Others mentioned the moderating effect of awareness of costs.

2.6. Summary comments from Week 1 Questions
A broad variety of comments on uploading/downloading process leaves the impression that not all procedures called uploading/downloading by participants are the procedures meant by the investigators.

A section of pre-tested procedures for uploading/downloading should be added to the OISE PARTI Manual. This should contain a glossary with specific descriptions of what is possible, as well as general steps advised for trouble shooting with various systems. Words such as "batch" are very off-putting to the new user, and need to be explained/replaced so that more efficient procedures seem accessible.

Some participants complain of the time/space taken by other conferences, such as the student association conference. A section in the manual specific to how to hurry through, amble through, etc. would answer such concerns. Also, a review of use of the inbox - del unwanted would be valuable. It seems that new users are not aware of the

use of SCAN and KEEP commands as ways of controlling information retained for further consideration, and/or downloading.

3. Week 2 Questionnaire

3.1. What amount of time do you spend on-line on average each time you login?
Four spend a few minutes, ten spend up to 30 minutes, 3 spend up to 60 minutes, and none reported spending more than an hour.

Thing mentioned as adding to time on are (technical) problems, number of messages (e.g. in non-course conferences).

3.2. How often do you usually login for this course?
Six login more than once a day, six daily, one every second day, and the remaining four two to three times weekly.

3.3. Does the amount of time spent on-line reflect:
Two people stated that the time online reflects datapac costs incurred due to distance. Three relate their time online to personal online style; none related it to technical ability alone. Ten people related their time online to a combination of the factors. Four related it to online style and technical ability, and tree to datapac costs and online style. Two linked online style and "other", and one each cited datapac costs with technical ability, and datapac costs, personal online style, and technicalability. The other reasons detailed as affecting time online were: interest - 2; no datapac charge - 1; workload - personal, business - 1.

Of the 8 people who cited datapac costs as affecting their time online, seven were datapac users. The fact that datapac costs are cited by 7 out of 11 datapac users within the respondent group is of interest as these students were not personally paying the charges (did they see them?). Both people citing interest as a reason for time online were non datapac users. Two datapac users cited "other reasons", one being lengthening of time online by "MECASA" notes, and one mentioning shortening of time online by other workload from personal and business obligations.

In Summary:

The total number of citations were thirty. Of those thirty citations, a) datapac costs accounted for 27%, b) personal online style for 43%, c) technical ability for 17%, e) other for 13%.

3.4. If you had any major problems in this on-line course were they due to: (rank in order of degree)
Of the seventeen responses to this question, two respondents cited no major problems in the course. Ten respondents cited one problem area, two cited two problem areas, two cited three problem areas, and one cited four problem areas for a total of 24 citations. The percent of total citations is noted by each of the areas.

Technical problems (i.e., Parti, Datapac, Hardware, software) accounted for 33 % of citations. Problems with up/downloading accounted for a further 25 %. Trouble with threading of comments were mentionned in 21% of citations. Course workload (readings, assignments, interaction)comprised a further 17 %. "Other" comments accounted for the final 4 % of citations.

Related comments grouped into the following areas:

a) course workload problems:

Two people mentioned difficulty in obtaining information for assignment. One person related this to interaction with colleagues, and one to other pressures.

b) technical problems:

Three people stated this related to learning to use parti. problems due to a defective modem - 1 Two people related it to learning to use their modem, and two people to learning to use communication software.

c) trouble with threading of comments:

Comments indicated that one person didn't "really understand threading", another had problems... "with threading arguments through a sea of comment". Another perceived that there were "only problems at first - until people became familiar with the system".

d) up/downloading:

Comments indicate these were problems with hardware initially, and then with learning to use software.

e) other:

One person had trouble organizing a group for assignment # 2 & then hassle with account at York

Although two participants reported no major problems, the length of comments on difficulties with datapac leaves the impression that problems at that initial level leave a very strong impression on the nervous beginner.

3.5. Do you think a CMC course takes more time than a F2F course?
Please explain your answer.

Eleven answered yes, five answered no, and one answered maybe. Some of the extra time is explained by inefficient methods in up/downloading. Some mention that this type of concern is essentially part of the dual learning demand on the course participant who is not an experienced conferencing user. Some mention the time spent with text based interaction - reading it, trying to organize it.

3.6. How would you compare learning online with F2F learning?
(What are the specific advantages, disadvantages to on-line course work?)

One respondent stated simply "It's different." From the comments of other respondents, however, we are able to build a picture of what that difference was for them.

There were 47 citations of stated advantages in all, which formed the general areas of accessibility and effects of the medium on metacognition and interaction.

1. **Accessibility:** Twenty two citations were regarding time and place flexibility. The idea of access inherent in time and place was extended by five further comments regarding access to ideas, experts, and answers to questions in a timely fashion. Four citations of an (administrative)nature, two regarding cost advantage of the medium, and two regarding ease of use, were made.

2. **Effects of the Medium.** Fifteen of the cited advantages concerned the effect of the medium, or what they experienced happening uniquely because of the medium. Ten of these citations could be grouped as metacognitive advantages, and the other six as interaction characteristics.

    a. Metacognition

        i. Comments essentially summarize into the statement that since the medium is a text based time and place independent medium, it allows discussion to be characterized by "thoughtful participation. As you "can store and retrieve discussion that would be lost in F2F discussion", all previous comments are accessible to inform current thought at any time. As well, the participant has the advantage of working on responses "...with references handy for cross-referencing materials". One respondent summed this characteristic of the experience up by saying "talk about metacognition".

        ii. The text based nature of the medium was cited as being a particular advantage to those who prefer written to verbal communications. However, two respondents noted a closeness experienced on the medium which, for them, simulated at least partly something of F2F.

    b. Interaction; six comments were made by participants who found the interaction online highly satisfying, including: "The comments made by classmates are stimulating and varied. The diversity of approaches is mind expanding"; "You learn more about classmates". Comments also noted "...increased control of nature and extent of participation", and "anonymity"

There were 15 citations of stated disadvantages, mostly regarding the area of interaction. Five comments concerned a felt need for F2F: expressing a need for external discipline, a feeling of being housebound, a need to get away from distractions of home. "Sometimes 'virtual' coffee isn't good enough". Four statements expressed frustration

with waiting for online responses. Three statements concerned difficulties with online coordination of group activities (one of these was regarded a lack of skill in the other party). One person felt they had less interaction with the instructor. One person found the feeling of being overwhelmed by amount of information to be a disadvantage.

In Summary:

47 advantages were cited for on line learning. 31 comments related to accessibility, 15 comments related to metacognitive effects, and 6 comments related to interaction. 15 disadvantages were cited. These all could be classified as relating to interaction; missing F2F contact, or feeling frustrated with some types of interaction on line.

3.7. Would you take another on-line course? Please explain your answer.
Fifteen participants responded yes, none responded no, and two responded maybe.

Five people stated that they would take another on line course essentially because of the convenience of time and place. For some of these people, it was the attraction of the comforts of home, for others it was the avoidance of the discomforts of commuting. One person would not be able to take a regular course because of young children. Also mentioned was the efficiency of the medium in accessing information from a range of sources, from the comfort of home. One person mentioned the lack of distractions when working at home, and the convenience of keeping all references close at hand.

Three people cited an interest in CMC itself as sufficient reason for them to take another on line course.Two people would take a future on line course if the topic of the course interested them. One person cited increased learning in this medium as a reason for further online work, while one of those who were interested in the medium said that "I think that the learning experience can be comparable to any face to face course assuming that the student is committed to his own learning."

The identification of "sub-interest' groups was found to be "professionally and personally enriching". "You discover who is interested in the same things as you and you have the opportunity to communicate with these people. That doesn't always happen easily in other situations. Especially in areas with smaller populations."

3.8. Additional Issues Arising From Week 2 Responses
In exploring the issue of the level of participants' orientation within the CMC environment, we can combine responses on the major problems experienced by the participants with their descriptions of their organizational strategies. It is interesting to note that of the problem areas suggested in the questionnaire, technical problems and problems with uploading and downloading, which are closely related, together account for 58% of the total citations. Trouble with threading of comments accounts for only 21%. One interpretation of the later is that only 21% of participants have trouble with threading. Another is that before we can uncover trouble with threading, we must free the grip of technical problems so that participants are free to grapple with content issues.

It is also useful to note that for the second year in a row, problems with setting up an account at York U for fieldwork assignment have been noted.

4. Week 3 Questionnaire

4.1. Please describe how you organize reading your on-line (conference) messages.

Please comment on any techniques that you use and the frequency of that use. (For example: use of SCAN; segment #'s; KEEP; read INBOX from beginning to end.) Which? And how much?

1. Seven people report the use of BATCH. This is most often combined with a downloading procedure, so that information can be read at their leisure at home.

2. Four people report using KEEP frequently, two people report using it occasionally, and two people said specifically they do not use keep. Some people use it during a read-through of their inbox to save material for downloading, and some to save key notes for further consideration.

3. One person notes the number of comments they wish to reconsider, and accesses them through that method.

4. One person reports using SCAN, and four people comment that they do not use it.

5. Two people report simply going online and progressing sequentially through their inbox.

6. Two people reported considering the contents of their inbox, and deciding on a specific order for reading its contents.

In Summary:

BATCH was used by seven participants, KEEP used frequently by four, infrequently by two, and not used by a further two participants . SCAN is used by one, and not used by four. Two people report moving sequentially through their inbox online, and two people report considering the contents of their inbox and deciding how to proceed.

4.2. Do you go back to re-read old messages in a conference?

Sixteenth participants reported rereading old messages, and one did not. Five report doing this option infrequently. Two reread important content, and three reread to verify references or statements referred to in later notes, or to refresh memory of administrative detail. Four people who reread frequently do so regarding work for assignments. Five people reread when engaged in following a "thread" through the discussion. They may search back, or go back to reread the note referred to by number in the present note. As one of these comments stated "How else can you accurately follow the discussion?"

4.3. Do you download?
Sixteen participants download, one does not. Five do so regularly, nine do so selectively, and one does so only when the topic is of special interest. Five of these download to their own hard disk (two then move files to diskette; one then moves files to printer) Six download to diskette, four download to printer. Seven people report printing later, after downloading to dick or diskette.

Few methods of organizing stored content are mentioned. One organizes by date, one by core conference, and one by topic, or group (for assignment). Two people report a change in their downloading habits as the course progressed. They became more selective about what they downloaded to their own system. These people did not have hard disks.

4.4. If you print the materials, do you organize it?:
Ten participants report organizing printed materials. Tree say they seldom organize printout, one never organizes it, and two responses were unclear. Two people reported organizing materials in a filefolder, two in a binder; three occassionally print (one and then garbages the printout). Two reported printing selected information for a specific use. One printed but didn't organize.One printeds and might or might not organize it (would use binder).

Organizational schemes reported included by topic (3), by topic and theme (1), by theme with subdirectory, and by conference.

4.5. If you download to a printer or diskette how do you organize the comments?:
a) Two organized according to conference titles initially, but moved to themes. Three organized by conference, and themes within the conferences.

b) Three organized according to conferences titles and threads or themes within. Two people who had initially organized by conference titles moved to organizing by themes.

c) Other methods of organizing were by dates, or a code (e.g. A2final). One person admitted that their system was "disorganized".

Summary

The structure of the course does seem to indicate a structure for organization, for those who indicate an organization strategy. Only a few have moved on to using threads or themes as organizers. People who download to disk rather than print seem less apt to verbalize an organizational structure for this material. People who are faced with printout seem more apt to talk about "organizing" it at some later date.

5. Week 4 Questionnaire

5.1. As a collaborative design, what were the strengths and weaknesses of each of the following group learning activities?

5.1.1. electronic seminar/full group (session 1)
Two people reported late/reduced participation in this session due to technical problems, and thus had no substantive comment.

Comments on this session included two comments on the initial face to face meeting (which was felt to be good, with one comment that it was nice to get a feel for the instructor prior to the course).

Strengths

Two comments suggested that the introductory session is a necessity. Nine comments were made regarding strengths. Three of these were general statements, the strongest being that this was the "most effective collaborative environment". Six comments related to the "ice breaking" nature of the exercise.

Weaknesses

The most frequent statement was "too many people" and resulting in an overwhelming amount of information. Seven people commented in this area. One of these comments concerned the amount of discussion to handle while still handling technical difficulties, another found it hard to attach names to all personalities so quickly, and five comments simply referred to the amount of discussion generated by that number of people.

Five comments were made questioning the appropriateness of some notes sent by some class individuals to this conference which they questioned. Three of these people suggested that this activity "set the stage for domination by 2-3 (4) members". Two others suggested that some notes should have been sent as personal notes. In both situations, the commenter wished that the moderator had asked people to reduce or redirect their comment/notes.

One comment suggested that starting with the "group at large" is too overwhelming, and that there should be a change of order of activities to dyad, group at large, small group discussion, small group project, and great debate.

In Summary:

9 found this successful, 2 did not, and 5 were neutral.

Comment:

A question which occurred to the investigator was why certain roles were left so totally to the moderator. If a participant feels that one individual is inappropriate, are they less likely to give feedback on this medium? What is the perceived role of the moderator? A question which merits further study is how participants view their responsibility to group function in the electronic medium as it relates to the perceived moderator role.

5.1.2. e-seminar/small group discussions (session 2/3)
Comments on strengths were that this session sold them on the medium, and that starting off with articles and related tasks was "brilliant". A less positive comment was that reviews were done separately and merged, were thus less collaborative.

In Summary

10 found this successful, and 5 did not

5.1.3. learning partnerships: critical review (assignment 1)
Statements of comfort:

"I found working with one other person really comfortable and there was this understanding that was not even stated that we should each do half, of course. two heads are better than one, so the saying goes and we had the feeling that together we had a more complete job accomplished.

"I thoroughly enjoyed this format (One weakness was that one could do the assignment f2f if one wanted."

Four comments were made stating that this assignment is appropriate as an introductory collaboration because its scope and group size is manageable at an introductory level. One of these comment was: "Very helpful to reduce the group to 2 for the first major collaborative assignment"

"A focus helped overcome the initial shock of using the computer as an aid to communication. Also it was a useful task to be given source readings that provided expert views about the technology. The problem became apparent in some instances that one person 'carried the ball' and this happens in all situations.

One comment felt that the nature of the task and the size of the group related well, but that their particular partnership had produced the product with insufficient collaboration. A related comment indicated comfort with the assignment, but some question as to the whether a truly collaborative process had occurred, and indeed, whether with a dyad a fully collaborative process could occur. a third student who felt that collaboration did occur in their diad added that the next assignment with a larger group was more collaborative. (This same person admitted that they do prefer to work alone "Isn't this something from a teacher who is always trying to promote group learning in the classroom?")

Statements of discomfort:

One person said that more communications were necessary between the partners, and that work was shared as a finished product with resistance to changes or deletions.

Another's partner dropped the course without informing them, and thus "I found myself alone in virtual space, completing the assignment like any other essay."

Two people found this a very frustrating experience.Ones partner had opposing views about the nature of a critical review. "We almost came to blows online." The other had a

partner who they did not feel was a good or responsive author. Both of these respondents felt disadvantaged in marks because of the particular partnership.

Other Comments:

One comment pointed out benefits for using familiar article for this assignment, but also pondered on potential to stimulate the class with new articles for this assignment.

"Tense at first but my partner and I managed"

In Summary

Overall, as a collaboration, 12 found this successful, 2 did not, and 2 were neutral

5.1.4. small work groups to generate a product (assignment 2)

Positives aspects of the collaboration

"Assignment 2 was a delight. I saw my fellows actively participating in my explorations and myself adding to theirs. It was almost a shame that all of our research did not mesh as well as had been expected."

(Success partly due to the planned experience before): "This I felt was the most successful. I felt that we were more experienced with the organizing that must take place before this type of assignment."

"This was more successful because of the slightly higher number of people, I feel."

"a natural progression to collaborate with a larger group"

"The exercise is a good one, for learning online coordination techniques"

Two comments noted that sharing of workload "facilitated the examination of a system in greater detail than one person in the time constraints."

"The experience of 'going out' and 'bringing back' information for the group to analyze was exciting and valuable in this collaborative design."

"good, focused exploration and discussion"

"This was an incredible experience, the best example I've seen of effective collaboration."

Negatives:

One person "resented negative comments from people who hadn't sent any positive info i.e. hadn't themselves shared info with the group."

Three people felt their group members' contributions were unequal in effort required, and one felt uncomfortable with the quality of some work offered. "The medium is not

an excuse for shoddy work" This person goes on to state "By the way, I recognize that all I can do is smell a rotten egg-- I really can't lay a fresh one!" The third found it difficult to critique questionable content online with no non-verbal cues.

Other comments:

One person felt that more time on this task would have been useful, also commenting that it took some time for the group to organize the work.

One group (of 6) was felt to be probably too large for the task, which was "terrific"

Hectic forming the groups

Looked for others for a group "upon whom I could rely."

Groups of only two people had mixed reaction, as two reporting this were satisfied with their collaboration, but noted it was not a "small group". A third person found insufficient dialogue in their situation for a satisfying feeling, and doubted that they had really been involved in a collaboration. One suggested that probably a group of 3 or 4 was ideal for the task.

In Summary:

As a collaborative effort, 10 found this successful, and 5 did not. However, the negative comments came from those who ended up in a group smaller than intended. They also included those who expressed a concern for excellence in written product.

The positive comments were extremely positive.

5.1.5. debating teams (assignment 3)
Positive Comments:

"A GREAT activity. I will be let down when I can no longer communicate in this way."

"I liked the positions being assigned ... forced us to consider the other position... interesting way to synthesize the learning experience.

"it was fun trying to sit on the other side of the fence and support something I didn't believe in.'

Another person also commented on the fact that the debate activity helped to synthesize content.

"a very good learning exercise."

One person had a positive experience connected to a question about graduate study. This person had the experience of a real confrontation with their partner, which they were able "to turn it to a positive outcome. However, I'm not sure that this is a priority of graduate study."

Neutral Comments:

One person commented that with the structure given to the debate, there was perforce less collaboration. Another person commented on enjoying this aspect of being able to do one's own thing. perhaps for some learners there's a need for a break from collaboration.

A comment from two other participants reflect this feeling that they really prefer tasks which allow them more control over product. This comment is representative of the issue of the balance of collaboration/control which appears in comments.

One comment was that this had no more strengths than other conferences. Another felt they couldn't comment on the debate without further experience of it. Two commented on the expense of doing a parti search through datapac for this assignment.

Suggestions:

That debate entries be limited in length (this persons partner started with a 17000 character note)

"I wonder...if an exercise similar to this near the beginning might alleviate some of the dependence of one learner on another?

Summary

8 found this successful, 1 did not, and 6 were in between.

5.1.6. informal exchange ("coffeehouse", "assist", etc.)
One person felt that this was the most collaborative area "as evidenced from the ongoing dialogue". They suggested that "overview" should be included among the informal conferences.

Two comments came from people who did not participate much, but enjoyed the informal conferences. One very positive person got a lot of nods and chuckles from these, and felt there was a greater camaraderie than with face to face classes. This person "lurked", but still enjoyed the atmosphere and felt a part of it.

Two people commented on coffeehouse fulfilling the need to socialize. One commented "One actually had the feeling of being in a crowded room with lots of people chattering around you while enjoying the company of others." As one comment stated, "coffeehouse - appears to be the CCer's "CB" Two felt that this facilitated group interaction, as "You can work more effectively in a group if you know how your partners tick..." Another felt that this gave personality to the names on the screen. One person found that the contributions in coffee house varied. One person who did not participate did not enjoy coffee house as they felt it was dominated by a few.

Three people commented on the value of assist.

One person felt that learning log was "abused too often by personal discussion."

Summary

8 were positive, 1 negative, 2had not used these areas, and 1 was neutral.

5.1.7. other (library, etc.)
Comments focused on "library".

One comment stated that "library" was "useful and important" Another was that this conference has potential, but its not yet realized. Two participants liked the convenience, "excellent resource at your fingertips".

One did not use the conference as they lived close to OISE. They wondered if the librarians were hoping people would use it, or not use it. One person was disgruntled that the library "struck out" with their one request (whatever that was)

Two participants reported that they didn't use the library conference.

Summary

4 were positive, 1 was negative, 1 had not used this area, and 3 were neutral.

5.2. Summary of Comments
The most successful collaborative activities were felt to be c & d.

Those who did not find the initial full group electronic seminar successful either had technical problems, or found the number of participants overwhelming, or a combination of those two phenomena. Two people suggested a change in order of these activities, starting with dyads. The self declared loners preferred the debate. One person felt they were only guessing at the meaning of collaborative design and asked for a clarification.

5.3. Reflect on each of the above and comment on the quality of the experience. For each one comment on:

5.3.1. Group size
Four were satisfied with the group size in all situations: "for each activity the group size was right"; "with course organization were able to experience what the medium is like with various group sizes".

Seven were generally positive about group sizes, but added qualifying comments such as: fine except for assignment 1 which would have preferred as an individual assignment; debate could be a group larger then 2; assignment 2 needs a group of at least 3 or 4 (and a decent BBS). Also, "larger groups made personalizing the names more difficult"; fewer would have been less overwhelming for the initial activity; and if all members had been equally active it could have been overwhelming. A final comment was that if members had kept entries pertinent it would have been less overwhelming.

Two comments were made specific to larger groups: "...in the larger group conferences it seemed that some people faded out for whatever reasons"; "More difficult to be

insulting".

5.3.2. Nature of the task
Nine comments were highly positive about the nature of the tasks:

Four commented that all tasks "worked" toward the success of the experience. One liked the variety another liked the order, moving from articles to related activities. "The quality of the experience has been superb, because I have not only learned a lot in the content sense but I have learned a lot about myself." "The nature of the task in each case appeared to be well thought out with clear instructional intent. The tasks seemed appropriate to an introductory course in a new field. The tasks also reinforced the experiential nature of the course." "The assigned tasks were very relevant to online communication..."

Additional comments were essentially positive with qualifiers: one participant would like field work to have a longer time line within the structure and play a bigger role. One preferred the larger projects that allowed the division of research labour. One participant commented that "debating meant more critical reading and the time to do such". Another didn't like debating from point of view opposite to their own, and another, for unspecified reasons, would scrape the debate.

5.3.3. Reward structure:
Participants pointed out, either within their comment or by the breadth of the comment, that a reward is a highly individual entity. Three people stated confusion on what rewards can mean. The following comment illustrates this: "Do you mean marks? recognition by fellow students?? the possibilities for jobs? I like the fact that I get prompt feedback from Linda and fellow students. I have no idea what else could be used as a reward structure."

Three people felt the rewards were intrinsic. Three comments centered around the reward of comment by and feedback from ones peers on ones work. Two people commented on the difficulties of grade allocations for collaborative work. "The allocation of grades for a CMC course is difficult to assess, because of the "collaborative" requirements for assignments."

One person mentioned the reward of instructor support. "I like the way the instructor encourages everyone and expresses appreciation for their efforts and helps to solve problems. This is almost unique in my graduate experience."

And finally, on last comment - "I was not aware of a reward structure."

5.3.4. Formation of groups
Eight people made positive comments on the group formation processes. Six of these were generally positive about the process. Two comments supported the statement that "there was a good balance between self-formed and instructor-formed groups for the various activities."

Two people mentioned the difficulties they found in the process of group formation: "Group formation is always tricky and even more so in this type of a course...I don't have a solution for this one..."; "a bit hectic. After being burned in the first assignment,

I like many others in the class, was quick off the mark to form a group for assignment2. I looked for people upon whom I could rely".

One person commented that perhaps groups should have been no smaller than three.

5.3.5. Group dynamics/ group decision-making:
Two participants felt that "This group has the characteristics of the average class in a classroom environment." In contrast, another comment was "the group dynamics are very different from f2f... I do not have a clear sense of how best to describe the group dynamics which evolved."

"Would this area have been as easy with less experienced learners?"

"The group decision-making seemed to vary based on the nature of the task and the group members. Very true to life!"

"I resented negative comments from individuals who hadn't sent any positive info i.e. hadn't themselves shared info with the group.

"This learning to negotiate on-line is taxing. Then again, that is the real exercise: negotiation";"one person tended to organize when groups were 3+ in size".

"The best was... Assignment 2 and it was superb"

5.4. How could the on-line group activities be improved? (i.e., deleting, adding and/or expanding current activities, changing, etc.)
Three respondents had no answer, and two had no suggestions.

"I'm really tying hard to find something to suggest but actually I will always remember this course as one of my favorites."

"I couldn't suggest any improvement. Everyone's circumstances are different and the flexibility which the system offers although it presents some problems is an essential ingredient in the course."

Essentially, comments suggested that; group size should be limited to 15; start with the dyad and then the rest of the activities; use different readings for the dyad and the small group.

Also, "More time to prepare the debate positions would have been beneficial to me."

"I am very interested in the notion of threading and hypertext in CC. If this idea is enhanced with future programming considerations, the environment will, no doubt, become a better place to learn.

Comments on small groups suggested that the instructor insist on specific numbers in a group, and assign participants to groups if groups are not formed after two days of voluntary formation.

Participants feel the moderator should :

- Limit input of "vocal, ensure note relevance, and encourage use of personal notes.
- Not use participation as basis for marks.
- Encourage the quiet to participate.

Comments centering on interpersonal aspects are:

"It would be useful to talk about the feelings that accompany and motivate the activity, both in the very first session and perhaps on-line. I have done a lot of group work in my years, but I have never become so impassioned about group work generally and decision making specifically as I have under conditions of computer-managed communications. That, for me, was where the real learning was."

"Profiles could be more complete and descriptive - also available throughout the course for reference. That way a personality could be more easily placed within the comment."

Comments on Parti:

One person complained about the amount on the screen, the difficulty in finding past personal messages, the difficulty with using find generally.

That same person asked for more upfront help with technical matters, so that learning time was not spent in learning these things. Gaps in the Parti manual instructions were pointed out.

Technical help increased up front (as above) - 2

(General Frustration) "This course has consistently struck me as a "golly-gee-whiz-isn't-this-wonderful" sort of exploration. There are contrasting viewpoints that we encounter every time we suggest the medium should be used. In MECA we have converts to technology and w do not nd convincing. What w need are the tools to convince our uninitiated colleagues. This course has provided none of this."

5.5. Any other comments?

Ten people had no further comments One stated simply, "It's been fun." One comment summarizes statements which were made throughout the responses describing what we have come to call the "dual learning load". "On the whole, it has been a valuable experience. I've learned a lot about the subject and about techniques of computer conferencing. The biggest challenge for me is how to organize the material (I still don't really understand threading). I don't organize paper files well and am hoping I will develop a good system for computer files."

Another comment relates to the importance of a carefully structured and guided online learning experience. "We have had a very powerful experience in this course. I believe that much of this is due to Linda. She is highly competent in the field and is obviously

motivated to make it a worthwhile, effective learning experience. it shows and it works!" And one, finally, relates to the rewards of the experience. "...I find myself wondering...how come I have not said 'cut something out, it's too much!' I guess I wouldn't have wanted to miss out on any of it."

6. Comments and Issues Arising

It would appear that technical problems dog many participants, and that this disturbs the rhythms of learning and interaction within the course. Once the technical problems have been conquered, participants can move from the split between learning content and learning technology to a concentration on course objectives.

For students new to the medium who must learn to upload/download, what are the psychomotor skills involved?

With the great majority of participants uploading/downloading, future questions to course participants may look at the effect that this has both on course interaction patterns, and on work patterns of participants. What is done after downloading? Is it "critical reading", analysis? Is there any correlation between the level of technical competence and confidence of the participants and the level of cognitive process used with course content?

What are the group processes and are they specific to the medium?

What is the impact of uploading/downloading on the use of the Parti commands? Do participants make use of Parti features to track such things as themes, or do they do this on their personal systems (or indeed, with pieces of printout taped to the wall!)

I. APPENDIX: QUESTIONS SENT TO PARTICIPANTS

Week 1 Questionnaire

1.a) Are you uploading for this course?
  b) Are you downloading for this coures?
  c) If not both, please specify which and why.

2. Did you learn to up/download for:

  a) this course
  b) a previous on-line course
  c) or did you learn for some other reason?

3.a) Have you had technical difficulties
    uploading/downloading?
  b) If yes, please describe the problem(s).
  c) and in what ways did the technical problems affect
    your class interaction and activity?

4. Has the ability to up/download facilitated (or not) your
    work in this course?

  a) YES [ ] NO [ ]
  b) In what ways? (Elaborate pros/cons if appropriate)

WEEK 2 QUESTIONNAIRE

Hello, thank you for answering week 1's questions. Here are
week 2's questions.

1. What amount of time do you spend on-line on average each login?
 a) a few minutes
 b) up to 30 minutes
 c) up to 60 minutes
 d) more than an hour (about how much time in total?)

2. How often do you usually login for this course?
 a) more than once a day
 b) daily
 c) every second day
 d) 2-3 times a week
 e) once weekly
 f) weekends only

3. Does the amount of time spent on-line reflect:
 a) datapac costs incurred due to distance
 b) personal on-line style
 c) technical ability
 d) a combination of the above (specify which)
 e) other

4. Any major problems in this on-line course were due to: (rank in order of degree)
   a) course workload (readings, assignments, interaction)
   b) technical problems (i.e., Parti, Datapac, Hardware, software: specify which)
   c) trouble with threading of comments
   d) up/downloading
   e) other (specify)

5. Do you think a CMC course takes more time than a F2F course? Please explain your answer.

6. How would you compare learning on-line with F2F learning? (What are the specific advantages, disadvantages to on-line course work?)

7. Would you take another on-line course? Please explain your answer.

WEEK 3 QUESTIONNAIRE:

1. Please describe how you organize reading your on-line (conference) messages. Please comment on any techniques that you use and the frequency of that use. (For example: use of SCAN; segment #'s; KEEP; read INBOX from beginning to end.) Which? And how much?

2. Do you go back to re-read old messages in a conference?

   a) YES or NO
   b) If yes, tell us why and how frequently.

3. Do you download?

   a) YES or NO
   b) If yes, how often and why? (ie., regularly, seldom, selectively, only when the topic is of special interest, etc.)
   c) If yes, to 3.a), what do you download?:
      i) Do you down load ALL to a printer (at home, at OISE?)
      ii) Do you download ALL to a diskette
      iii) Do you download selected parts to a printer:
         a) all core conferences
         b) some core...
         c) all non-core conferences (assist, learning log, coffeehouse, etc.)
         d) some non-core...
         e) other
      iv) Do you download selected parts to a diskette
         a) for storage

b) for filing (filed under topic names?)
c) to be printed later

4. If you print the materials, do you organize it?:

   a) YES or NO
   b) If yes, how ? (ie., in a file folder, topic, cut and paste comments to a theme, garbage can, other?)

5. If you download to a printer or diskette how do you organize the comments?:

   a) organize according to conference titles
   b) organize according to threads (themes)
   c) other (specify)

Hello, this is the last set of "questions of the week" - (how to spell relief?) These questions seek both to collect your input on the course design and more specifically feedback on the group activities which formed the basic course structure.

QUESTIONS OF THE WEEK 4

1. As a collaborative design, what were the strengths and weaknesses of each of the following group learning activities?

   a) electronic seminar/full group (session 1)
   b) e-seminar/small group discussions (session 2/3)
   c) learning partnerships: critical review (assignment 1)
   d) small work groups to generate a product (assigment 2)
   e) debating teams (assignment 3)
   f) informal exchange ("coffeehouse", "assist", etc.)
   g) other (library, etc.)

2. Reflect on each of the above and comment on the quality of the experience. For each one comment on:

   a) group size
   b) nature of the task
   c) reward structure
   d) formation of groups
   e) group dynamics/ group decision-making

3. How could the online group activities be improved? (i.e., deleting, adding and/or expanding current activities,

changing, etc.)

4. Any other comments?

Thank you, once again, for your time and consideration in answering the "questions of the week".

II. PROCESS FOR "QUESTION OF THE WEEK"

Process for the Question of the Week:

1. Create a name file for the specific course. Code numbers are assigned at this time. Print a copy of the file. You can rule this printout so that it can be used to keep track of response rate (see binder for previous examples).

2. Insure that a copy of the questwk*.mss file is in the reference binder. This binder gives the previous questions, activities, and results for the question of the week investigation.

3. Edit the question file with any changes. Be sure to remember the file name.

4. Enter parti. Go into the scratch pad. On a new line do a .copy questwk*.mss This will bring your edited file into the scratchpad. Then do .edit, and at the start of the questionnasire add your preamble. At the end of the note remind where to send responses to.

5. Create a conference to store responses for each weeks questions. As responses come into your mail, mark the individual off on the name file printout and forward the response into the conference space.

6. When the conference is complete, on the action prompt do file command (see parti manual for instructions) and create a regular VAX file of the total responses.

7. Copy the file. Edit the copy to: a) replace names with codes (each question should have the respondent code attached); b) take out extra text (parti info); c) place all responses to 1. together, 2 together, etc.

8. Print out the file on lgprint for analysis.